

Birds @ Farmland

Selection of 15 farmland bird flagship species

Background paper

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DEVELOPING TOOLS TO SUPPORT FARMLAND BIRD CONSERVATION IN THE EU

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Europe's diverse farming landscapes cover more than half of the EU territory. The Birds@Farmland initiative was tasked to select ten representative agricultural systems and fifteen typical farmland bird species across the EU, to deliver a representative set of options for developing twenty conservation schemes.

Scope of Work Package 2: Overview of conservation science for Flagship birds

The aim of this Work package is the identification of 15 flagship farmland bird species in the 10 member statesⁱ in the focus of the contract to assess the main Conservation Actions currently ongoing for such species and then elaborate a factsheet for each of the species, including information on: i. Population and ecological requirements of the species with a link to agriculture and key knowledge gaps relevant to their management; ii. 'Umbrella character'; iii. Threats and pressures on their habitat (linked to agricultural practices); iv. Habitat-related conservation measures and current funding schemes; v. Identification of the most/least successful habitat-related conservation measures; vi. Identification of indirect socio-economic benefits for farmers and wider society derived from successful habitat-related conservation measures.

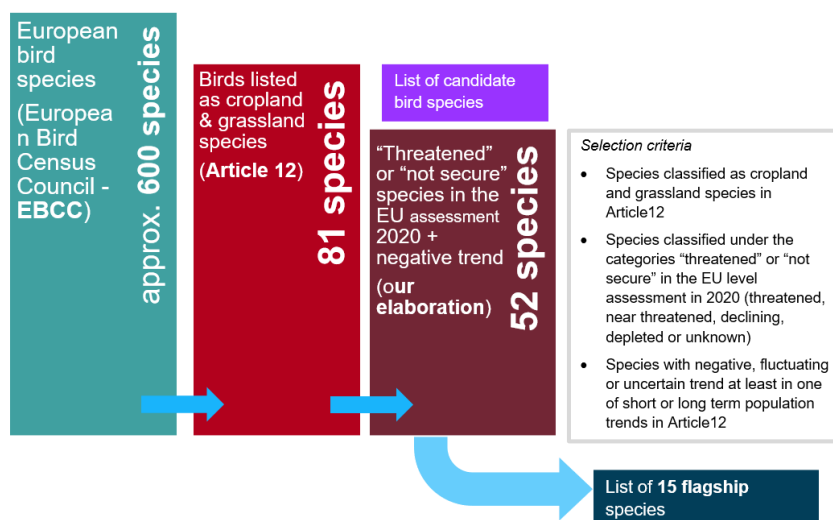
This background paper summarises the results of the first of two tasks included in this work package:

- Task 2.1 Identification of at least 15 farmland bird species with unsafe status or declining trends in Europe as flagship species.
- Task 2.2 Collect the relevant information for the conservation of the 15 flagship species.

Selection of candidate species

The selection of the 15 flagship species followed a multi-criteria approach and included farmland birds under the same categories "threatened" or "not secure" as in the latest EU level assessment 2020¹. The selection process began with a sequential filtering procedure (Figure 1): from the approximately 600 European species listed by the European Bird Census Council (EBCC)² narrowed down to 81 species reported to inhabit cropland and grasslands in the Article 12 reporting tool³. Then, selecting 52 threatened or not secure species as candidate flagship species.

Figure 1 Filtering procedure to select a short list of 52 candidate bird species.



ⁱ Austria, Belgium, Czechia, Germany, Spain, Finland, France, Hungary, Italy, Portugal

Multi-criteria approach to the selection of 15 flagship species

All 52 candidate species were subject to a multi-criteria selection (see below) to shorten the list to 15 flagship farmland birds. The multi-criteria approach included two main steps, described in detail below: Step 1, a calculation of a score to rank the 52 candidate species; Step 2, the high ranked species were compared among each other to balance out their attribution to additional traits relevant to their conservation in farmland (e.g., huntable or not according to the Birds Directive, resident or migratory, etc.).

Step 1. Calculation of a ranking of species based on binomial variables (0 or 1)

- Occurrence in > 50% of the EU MS. Value = 1 if the species is present in more than half of the 27 EU member states.
- Occurrence in > 50% of the 10 selected EU MS. Value = 1 if the species is present in more than half of the 10 EU member states where conservation schemes will be developed.
- Negative long population trend (breeding). Value = 1 if the species is characterized by the overall negative trend in the long-term evaluation provided in Article12 tool³. For species present in the continent only during the winter, this was assessed for wintering season.
- Negative short population trend (breeding). Value = 1 if the species is characterized by the overall negative trend in the short-term evaluation provided in Article12 tool³. For species present in the continent only during the winter, this was assessed for wintering season.
- Farmland Bird Index (FBI). Value = 1 if the species is part of the list of 39 species used to estimate the Farmland Bird Index (<https://pecbms.info/european-wild-bird-indicators-2020-update/>).
- International Multi-Species Action Plan Conservation of Breeding Waders in Wet Grassland Habitats Birds Directive⁴. Value = 1 if this European initiative includes the species Baltic Dunlin, Black-tailed Godwit, Common Redshank, Common Snipe, Eurasian Curlew, Eurasian Oystercatcher, Northern Lapwing, Ruff.
- Synergy with EU Pollinators Initiative: we made a link between the bird species and pollination through their interdependence on habitats important for pollinators in Europe, as referred in Kudrinsky et al, 2020. Value = 1 was attributed to species using dry or wet grasslands^{5,6} for breeding or foraging.
- IUCN (CR, EN, VU, NT). Value = 1 if the species is classified in one of these four categories of threat by the European Red List assessment (IUCN, 2020).
- Umbrella character: Value = 1 if the species shares the same habitat as some other candidate species, using the same habitats and farming systems identified in the WP1 (e.g. habitats represented in the "Dominant type of farming system" selected under WP1). If positive, the bird species is listed together with the species it shares habitats with.
- Charismatic species^{7,8}. Value = 1 if the species was considered as charismatic by experts' opinion. "Charismatic" are those species easily recognisable by common people by their shape, colour, song, or behaviour. The expert assessment prioritized birds attractive for citizen science initiatives and familiar to farmers.
- Potentially useful for biocontrol. Value = 1 if the species is insectivorous or hunts rodents, such as diurnal or nocturnal birds of prey^{5,6,9,10}, potentially useful as pest control agents in agriculture.
- National Species Action Plans in Europe. Value = 1 if the species is subject to at least one National Species Action Plans in Europe, as described in the Article 12 tool³.
- Diet specialist. Value = 1 if the species is classified as a diet specialist in Morelli et al., 2019, since such species are considered more prone to extinction risk.

Important comment: In the tail of the list of candidate flagship species, several species have an equal ranking. For those species, we took into account the population status categories from the 2020 EU Red List assessment and the Article12 and population trend (short and long term). For example: if two species were ranked = 9, but species 1 is classified as "depleted" and species 2 is classified as "near threatened", species 2

was chosen. If one species was ranked higher but is not strongly dependent on agriculture systems, it was replaced by the next highest ranked species in the list.

Step 2. Comparison among highest ranked species to balance the final list of 15 species

We assessed the highest ranked species obtained in step 1 with the aim to balance the final list of 15 species, considering different traits reflecting their conservation and management characteristics (e.g., huntable or not, resident, or migratory, well represented in the ten selected EU member states or in 10 agroecosystems selected in the WP1, availability of specific case study demonstrating positive response of the species to agriculture measures in each EU member state, etc.). These additional criteria were applied to the initial ranking to add extra points in a cumulative way. Thus, the more criteria a species met, the higher was the score it received. In the case of a draw in the final rank, we elaborated a matrix with scores for each agricultural-dependent bird species in the EU, based on the criteria previously described, selecting 15 species from the highly ranked species. The final list was discussed with the EC and incorporated feedback received during national workshops held in the 10 member states where conservation schemes will be developed.

The final list resulting from this selection process can be found in Table 1.

Table 1: List of 15 highest ranked species proposed as the 15 flagship species, occurrence of species in 10 member states (MS) and 10 selected agricultural systems (AS).

Scientific name	Common name	Occurrence in 10 selected MS	Occurrence in 10 selected AS for breeding
<i>Limosa limosa</i>	Black-tailed Godwit	10	8
<i>Vanellus vanellus</i>	Northern Lapwing	10	10
<i>Hirundo rustica</i>	Barn Swallow	10	10
<i>Tringa totanus</i>	Common Redshank	10	10
<i>Alauda arvensis</i>	Eurasian Skylark	10	10
<i>Galerida cristata</i>	Crested Lark	9	9
<i>Lanius senator</i>	Woodchat Shrike	7	7
<i>Numenius arquata</i>	Eurasian Curlew	10	8
<i>Saxicola rubetra</i>	Whinchat	10	8
<i>Circus pygargus</i>	Montagu's Harrier	10	10
<i>Emberiza citrinella</i>	Yellowhammer	10	9
<i>Perdix perdix</i>	Grey Partridge	9	9
<i>Philomachus pugnax</i>	Ruff	7	
<i>Streptopelia turtur</i>	European Turtle Dove	10	10
<i>Tetrax tetrax</i>	Little Bustard	4	4

Table 2: List of the agricultural systems most frequently associated to the 15 species

Low-intensity Continental non-irrigated annual crops
 Low-intensity Mediterranean non-irrigated annual crops

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